

Reviews and Bibliographical Notices.

A Treatise on Insanity in its Medical Relations. By WILLIAM A. HAMMOND, M.D., Surgeon General United States Army (Retired List), Professor of Diseases of the Mind and Nervous System in the New York Post-Graduate Medical School, President of the American Neurological Association, etc., etc. D. Appleton & Co., New York, 1883.

This portly and well-written volume appears almost simultaneously with the manual of Dr. Spitzka, and is from the pen of one of the very few men in this country, whether in or out of the circle of professed alienists, competent by experience and study to write a book on insanity. Prior to the appearance of the works on insanity of Drs. Hammond and Spitzka, perhaps no systematic treatise on the subject had appeared in American medical literature since that of Dr. Benjamin Rush, of Philadelphia, of nearly a century ago.

We may pass by, for the present, the reasons given by the author in the preface to his work, justifying him in its preparation. The volume comprises nearly eight hundred pages, and is divided into comprehensive sections with the following titles :

I. General Principles of the Physiology and Pathology of the Human Mind.

II. Instinct ; its Nature and Seat.

III. Sleep.

IV. Description and Treatment of Insanity.

To adequately review these important topics as they are here treated would demand the space of a small volume. Hence, but few of them can or will be discussed.

For the practical purposes of the general practitioner, or even of the alienist, the definition of mind given by Dr. Hammond is adequate. But in view of broader relations we would not only

require enlargement, but even qualitative modifications before it would be acceptable to us.

In the second chapter, under the head "Divisions of Mind," are certain statements which attract our attention. Among them we would cite the following: "The mind, like some other forces, is compound—that is, is made up of several sub-forces. These are: perception, intellect, emotions, and will" (p. 15). It seems strangely mechanical to speak of mental *sensibilities* as *forces*. Certain it is that the majority of well-informed readers in psychology from whatever school would pause before admitting perception and emotion (feeling) without discrimination into the category of forces. Dr. Hammond's discussion of the highly important subject of perception is of such a character as to make it seem necessary to inquire with some care into its nature and anatomical seat. To go back a little, it may be said in a general way that there are two forms of sensibility, *unconscious* and *conscious*. Whether any part of the gray matter of the nervous system is entirely devoid of unconscious sensibility may or may not be questioned. But that only limited parts of the nervous system, in man at least, are the anatomical seats of sensibility *with consciousness* in man, can admit of no well-founded doubt. But it remains a question to this hour just what are the limits of the nerve areas within which occurs that distinct mental reaction to sense impressions as well as to certain other mental states or conditions known as consciousness. Much has been done, however, in the progress of nerve physiology toward defining the areas in question.

It seems to us highly probable that perception in the accepted use of the term denotes *sensibility with or in consciousness*. Within the field of consciousness, and there alone, may a *sense impression* (not a *sensation*, as is so often erroneously said) be perceived—that is, known or cognized as such by the mind.

Perception includes, therefore, in the full sense of the word: first, a sense impression; second, that the impression shall be felt or cognized by the mind, the act of perception including to a variable extent in different cases the active mental element of attention. The vast majority of sense impressions never enter the "sphere of consciousness," but are either disposed of in the wilderness of reflexes of which the nervous system is the field, or are diffused throughout the nerve mechanisms into which they are projected, never giving rise to manifest reflexes, nor if to any, to none but the vaguest states of consciousness. So much then in a preliminary way as to an outline definition of perception, than

which there is no more important subject for study for the medical psychologist. Dr. Hammond's definition of the word we may pass as substantially correct. But another question of great interest arises in his discussion as to the real seat of perception. In what part or parts of the nervous system is this function accomplished? Dr. Hammond says (p. 18): "There are reasons for believing that all perceptions are formed in the optic thalami." By this statement we understand our author to mean, the optic thalami are the anatomical seats of, or centres for, perception. In order to render the real meaning of our author clear, we would refer readers to the diagrams on pages nineteen and twenty-seven of the work.

If the thalami remain intact, though the mass of the hemispheres above them be removed, perceptions or sensations *with consciousness* yet occur. Dr. Hammond has been led to adopt the opinion just expressed for the following, among other, reasons, which we summarize :—

1. Because, as Magendie was perhaps the first to show, irritation of these parts may cause excessive pain, while irritation of other parts of the brain does not cause pain at all, or to the same degree.

2. Because in experimental destructive lesions of the optic thalami, like those of Fournié, sensation in the opposite side of the body is diminished, or even abolished.

3. Because pathological destructive lesions of the gray masses in question in man have led to abolition of sensibility in the opposite half of the body.

4. Because non-destructive disease of the optic thalami are believed to be the cause of hallucinations, as of sight and hearing, particularly in the opinion of Luys and his pupils, among them being M. Ritti.

5. Because certain of the lower animals, pigeons for example, appear to retain visual perception after removal of the hemispheres.

6. Finally, because anatomical research on all hands tends to show that many, if not all, sensory nerve-tracts appear to enter or to be represented in the thalami.

But in truth it must be said not one of these reasons really support the view of Dr. Hammond. They are all susceptible of being harmonized with the view that the cerebral cortex is the actual seat of sense perception in man and the higher vertebrates.

It may indeed be admitted that many if not all sensory tracts from the cord and medulla and certain sensory nerves, notably the

optic and auditory, as they pass on their way to the brain converge in the gray matter of the thalami, where the sensory fibres contract relations, permitting on the one hand a most extended series of reflexes in coördinate and subordinate portions of the motor side of the nervous system, and on the other hand connections are formed with sensitive areas of the cortex above, by means of fibres arising in the thalami and diverging in various directions to terminate in the cortex as already said; the latter being the true and only seat of perception, as above defined, at least in man and higher vertebrates,—a position, apparently the clear outcome of physiological researches, such as those of Ferrier, Murck, and others. But even omitting these latter altogether, the position we have assumed seems necessitated by the pathological observations of a host of competent investigators as to the effects of many cortical lesions in blunting or even abolishing sense perception, whether special or general, in the presence of cortical lesions, when at the same time the thalami have been found normal. From the position we have just taken we may readily see how destructive lesions of the thalami might lead even to abolition of sensibility on the opposite side of the body, for the same reason that section of the cord or of nerves lower down would lead to the same result without justifying the assumption that they are the seats of perception. Irritation of these bodies, or of nerve-tracts entering them, might give rise to pain, on account of the impressions so produced being projected into sensitive areas of the cortex. Likewise irritative disease of the thalami might give rise to morbid excitations borne by radiating fibres into sensitive areas of the cortex by the same way as those coming naturally from the outer world, and, according to the law of eccentric projection, referred by the individual to the outer world, though the excitations which form the sense basis of a hallucination come really from the diseased thalamus. Finally, as regards the results of removing the hemispheres of pigeons, they are open to serious questions as to their real significance in respect to the presence or absence of consciousness, and when applied to man they have more than doubtful value. But to consider these latter questions in a satisfactory manner would extend this notice beyond ordinary limits. Finally, before dismissing this subject, we would call attention to the real position of M. Luys as to the anatomical seat of sense perception. Dr. Hammond distinctly claims M. Luys as a supporter of his doctrine, “that all perceptions are formed in the optic thalami.” But a

careful study of the hitherto rather neglected but admirable works of M. Luys leaves us with the conviction that in his view the real field or seat of sensation with consciousness is in the cerebral cortex. Of his later works we would refer the reader to p. 101 of his "*Traité Clinique et Pratique des Maladies Mentales*," etc., Paris, 1881; and to page 45, to the diagram on page 61, to pages 66, 67, and 99, *et seq.*; and besides to other portions of his admirable little work, entitled "*The Brain and its Functions*," published by D. Appleton & Co., as a member of the *International Scientific Series*. We have given so much space to a discussion of the question as to the anatomical seat of perception, because of its signal importance, and because Dr. Hammond, if we have correctly understood him, has sanctioned by his high authority a serious error. In other respects, the brief chapter on "perception" is clear and practical.

Under the head "Intellect," Dr. Hammond gives the merest outline of a discussion—a little over one page, embracing a diagram, the latter intended to show the relation of a sense organ to the "organ of perception"—in other words, to the thalamus,—and finally to show the relations of the organ or organs in which a perception is converted into an idea, namely,—the cerebral cortex. In this brief space Dr. Hammond gives an old classification of the "intellectual faculties," and also the one proposed by Bain. The latter is rejected as less convenient than the former. In this matter we not only agree with our author, but would probably go beyond him in saying that, interesting as are the works on Mental Science of Alexander Bain, when he is dealing with particulars, yet his analysis and generalizations are so hasty, and, as a rule, so superficial and even mechanical, as to embarrass rather than aid the critical student. We know of no living writer having acquired a reputation in the field of physiological psychology less likely to enjoy a reputation in the years to come.

Under the head of Emotions, Dr. Hammond classifies as worthy of distinct positions in the list, "Superstition," "Fanaticism," and "Religious Feeling." Surely these can be neither designated as simple emotions, nor as distinct one from the other. They are complex, one embracing elements common to the others. Dr. Hammond calls in question the correctness of the statement of McCosh, that in the production of an emotion "there is need first of some understanding or apprehension—that is, of an idea." For ourselves we can agree not only to the erroneous character of the statement of Dr. McCosh, but must say, as a

result of careful study of his works, they are full of equally loose declarations.

But passing on from the first two preliminary chapters, in which Dr. Hammond defines the nature of mind, its divisions, according to differences in function or manifestation, we come to a discussion of the very important subject of "The mental and physical conditions inherent in the individual which influence the action of the mind." Under this head we have considered briefly—too briefly—the effects of differences in brain constitution on mental constitution,—for scarcely four pages are given to the subject ; and next we have a chapter on "Eccentricity." An eccentric person is said to be one whose mind deviates "in some one or more notable respects from the ordinary standard, but yet whose mental processes are not directly at variance with that standard." This may be regarded as a reasonably satisfactory definition, though it leaves the question of the difference between eccentricity and insanity to be regarded as merely one of degree, which may readily be admitted. By the term "Idiosyncrasy," Dr. Hammond understands "a peculiarity of constitution by which an individual is affected by external agents in a manner different from mankind in general." An idiosyncrasy, therefore, differs from an eccentricity chiefly in this, that one morbid condition is brought into play by some *external* object, while the other arises immediately from *internal* conditions. Genius is defined as follows : "The inherent tendency which some individuals have for original work of a high order in any department of literature, science, or art, is called genius."

In his rather lengthy chapter on "Habit," our author has by no means worked out, as may be and as ought to be done in a work like this, the physical basis of habit as laid in the nervous system.

There is a comparatively full discussion of the subject of "Temperament," of which Dr. Hammond admits four principal varieties : the sanguine, lymphatic or phlegmatic, the choleric, and the nervous. Important as the subject is in a practical way for the physician, there is so little precise knowledge, and hence so little in the way of sharp definitions, available in discussion of the subject, that we must pass alike the chapter and its subject for other parts of the volume. The chapter is, however, instructive and highly entertaining.

The subject of "Constitution" receives far too little attention, not only in this work, but the same may be said of the vast majority of medical works published.

"Hereditary Tendency" receives fuller treatment, but this chapter contains too little in the way of instructive judgments, based on the long study and wide experience in such matters that we must suppose Dr. Hammond to have had. A fair *résumé*, interspersed with the personal observations and conclusions of the author, is given as to the influence of age and sex in relation to mental disease. This first division of the work, consisting of one hundred and twenty-one pages, terminates with a brief chapter on "Race in its relation to mental disease." On the whole, while we have felt bound to join issue with the author at certain points, yet we desire to commend heartily the plan of opening a study of insanity by a formal consideration of the subjects so hastily passed in review.

In the next section (pages 122-150) the subject of "Instinct, its nature and seat," is treated. With the views expressed in the following extract we entirely agree: "A work on insanity would manifestly be incomplete without some reference to a principle of life present in all organic beings, from the highest to the lowest, from the most insignificant plant to man himself, and which, in all, determines, to a greater or less extent, the character of the acts by which existence is rendered possible. When we bear in mind the fact that, in man, a very considerable proportion of cases of mental derangement have their origin in aberrations of some one or other of the instincts, the propriety of its consideration becomes still more apparent. A great deal of confusion has existed among physiologists and psychologists relative to the differences between instinct and reason, and undoubtedly there are many difficulties in the way of distinguishing, with perfect accuracy, the manifestations belonging to each."—Page 122.

As Dr. Hammond truly says, "no inconsiderable amount of the obscurity has arisen from the loose manner in which words have been employed and meanings ascribed to them. I shall endeavor, therefore, to give a clear idea of what instinct is, and to separate it, by well-defined limits, from mind, before proceeding to the consideration of its aberrations." In the following fifteen pages, the more or less discordant opinions of not less than twenty-four different writers are quoted or summarized as to the *nature* of instinct, embracing examples of what are considered instinctive actions. We would have much preferred a close and fresh discussion of the whole subject by the author, embracing his own views, more fully stated and more closely reasoned than we find them to be in this chapter. Dr. Hammond says, in speaking of

instinctive actions: "They are not set in operation by sensations; on the contrary, the animal is prompted by the internal power to employ its senses in order to accomplish its objects. This force, therefore, stands in lieu of the will. In the case of Galen's goat, already quoted, it was instinct which impelled the animal to use its senses. It was not instinct, but reason, which made it select the milk. Instinct is not, therefore, the result of experience, or of reason, or of any choice founded on sensations. The line, therefore, between rational and instinctive actions can be closely drawn. The *former*, as Locke and his disciples have proved, are formed from distinct impressions which come to our minds from *exterior objects* through the medium of the senses. The *latter* arise from *within*, as the offspring of a force entirely independent of and even above the will." We may therefore summarize as follows the two capital criteria of instinctive actions as they are laid down by Dr. Hammond: 1. That actions called instinctive shall not have been *learned*; and, 2, that they shall be prompted by an *internal* stimulus, and shall not be excited by any sensation whatever from the outer world by way of the sense organs. As regards the first criterion, it must be accepted as true. Those actions performed prior to experience, which as a rule the individual is *born* with the capacity for doing, are instinctive. The mechanisms for instinctive action are inherited, and, as a rule, practically perfect at birth, or if not perfect at birth, they are developed without the distinct purposes or efforts of the individual. But we would reject the second criterion as being not fundamental. Every sensation, or feeling, or appetency, or emotion, when it arises, must appear within some sensitive nerve area, great or small. The nerve areas in question may be exterior or interior as regards the body, but in any case the sensitive impulses produce or tend to produce corresponding motions. If motions, or actions in consequence of stimuli from any quarter whatever, occur in nervo-muscular apparatuses, acquired by inheritance or independently of the training or education of the individual, they are instinctive. The word "instinctive" is properly applied to those *bodily and mental actions* which are not learned, and in the performance of which the will and intellectual faculties and acquirements of the individual have no necessary share. They are done *for* the individual rather than *by* it. Where instinct has the widest scope, volition and intelligence have the least, and *vice versâ*. The definition just given, we believe, is the one justified by a final analysis of the phenomena of instinctive life. Of course a study of instinctive

actions leads naturally to a study of their causes, and this inquiry leads directly, broadly speaking, to the sensitive side of an organism, the actions of which become the objects of study. This inquiry will, we believe, show that instinctive actions may be prompted from either within or without the body, and that instinctive actions, or better instinctive life, may be modified in various ways and degrees by the play of volition and reason, and *vice versâ*. Such, it seems to us, is a simpler and broader statement of the nature and sphere of instinct, than the one given by our author in his very interesting chapters on the subject.

The elaborate chapters on "Sleep" and "Dreams" are filled with quotations from a host of writers old and new, many of them highly interesting and curious, but in nearly every case serving to raise questions rather than answer them. In the chapter on sleep Dr. Hammond presents much the same views as those set forth in his book on "Sleep and its Derangements," published many years since. With his general doctrine, that sound, healthy sleep is accompanied, possibly caused, by diminished blood supply to the brain, we can agree, but regret nothing more is said as to the probable mechanism by which the cerebral vessels contract, giving rise therefore to a relative anæmia, to lessened brain activity, leading farther on to deep brain repose or sleep. In our opinion a useful advance in our author's explanation of the phenomena of sleep may be now given. The explanation of the *modus agendi* of dreams we consider as wholly inadequate, though correct as far as it goes. There is relatively too little close discussion and relatively too much in the way of collecting curious and striking histories of cases and anecdotes from the wide field of physiological psychology and medicine. These latter render the chapter fascinating to readers, but not so satisfactory to seekers for practical truth. These chapters, comprising two hundred and sixty-two pages, close the preliminary part of the book, the remainder of which is given to the "Description and Treatment of Insanity." To this more practical though not less interesting part of Dr. Hammond's book we would now direct the attention of the reader. In it we have gathered the vast experience and protracted studies of our author.

Very properly a definition of insanity is first of all attempted. Dr. Hammond finally adopts, with an amendment, the definition of Dr. T. K. Cruse as the most free from objection. It is as follows: "Insanity is a psychic manifestation of brain disease." To this Dr. Hammond would add: "unattended by loss of con-

sciousness." This may be regarded as a good definition in a few words. But while it is a duty to frame from time to time definitions as nearly as may be correct for the practical purposes of investigation, discussion, and in view of the requirements of jurisprudence, yet we should never forget that perfect definitions await perfect knowledge, which no one can pretend to have of insanity. That endless differences should arise among writers on insanity, when they attempt definitions, need not be the cause of surprise, in the presence of so many unsolved if not insolvable questions. The definitions of words such as illusion, hallucination, delusion, incoherence, delirium, "lucid interval," etc., may be considered as correct and aptly illustrated.

It is impracticable within the limits of a book review, however ample, to discuss fully the subject of classification of insanities. The system proposed by Dr. Hammond agrees in some respects, almost of necessity, with certain of the numerous attempts by earlier and contemporaneous writers. It is the result of much study and experience on the part of its author. But we must decline an expression of opinion whether as to its excellencies or defects. That it has defects the author clearly recognizes. For ourselves we share the not uncommon opinion, that an unobjectionable system of classification of insanities in the present state of our knowledge is impossible. But a recognition of this fact should not paralyze endeavors to approach nearly, as far as possible, a perfect system.

Of the forms of insanity treated in the latter two thirds of the work of Dr. Hammond, it may be said those most elaborately discussed are those most commonly met with. While there are many points in this as in the first part of the work from which we feel obliged to dissent, yet the practical part of the work is every way less liable to provoke criticism than that devoted to a discussion of general principles. Each article is literally crammed with apt and curious illustrations of the forms of insanity under discussion. But in this work, as in all the writings of Dr. Hammond, there is a comparative lack of close, painstaking discussion of phenomena. To many readers this would appear a merit rather than the lack of a *desideratum*. This quality renders Dr. Hammond's works easy to read and always delightful to the reader. We do not know of any medical author writing in a more easy or flowing style. The parts of Dr. Hammond's works in which the strictly medical therapeutics of disease is set forth has always proved most interesting to the profession, and the present work forms no exception in this respect to his earlier and justly popular productions. When it is

considered how much Dr. Hammond has written in the last twenty-five years, and when we remember his other arduous labors, the wonder is that what he has written should have met so uniformly with a favorable reception. No other member of the medical profession in this country is more widely known abroad. No medical man in this country has, or deserves, warmer personal friends, or has had enemies more bitter or relentless ; and perhaps no other member of the medical profession in this country has won a more signal triumph over adverse circumstances than has the author of the work to which we have called attention in this notice. However much it may contain to which the independent and critical student may take exception, yet it must be considered a notable contribution to English psychiatric literature, and a worthy companion volume to the author's work on "Diseases of the Nervous System," which has had so fortunate a history.

J. S. JEWELL.

**Insanity; its Classification, Diagnosis, and Treatment.
A manual for students and practitioners of medicine.**

By E. C. SPITZKA, M.D., Professor of Medical Jurisprudence, and of the Anatomy and Physiology of the Nervous System at the New York Post-Graduate School of Medicine. New York : Bermingham & Co., 1883, 8vo, pp. 415.

It was to have been expected that the attention which has been given by Dr. Spitzka to cerebral anatomy, physiology, and pathology, would lead to the production by him of a treatise on some subject connected with his studies, and in the work before us such expectation has been amply fulfilled. It was perhaps equally to have been anticipated that the volume would, to a great extent, be a synopsis of the views of recent German alienists who are, in our opinion, not always the best models to study, or guides to follow. But, though this anticipation has also been realized, the treatise is marked by many original opinions of the author, and its arrangement, classification, and general tone are sufficiently characteristic of his individuality as to make it altogether unlike any other of similar scope hitherto published.

The work is divided into three parts, of which the first treats of the general characters and the classification of insanity. It is probably that with which most fault will be found by the so-called medical psychologist, for it is that which is most marked by the author's peculiar views, and original views on any subject are those